

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2005/001004

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1

YES

Claims _____

NO

Inventive step (IS)

Claims _____

YES

Claims 1

NO

Industrial applicability (IA)

Claims 1

YES

Claims _____

NO

2. Citations and explanations:

Document 1: JP 2002-190276 A (Industrial Technology Research Institute), 05 July, 2002 (05.07.02), Full text; all drawings

Document 2: Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 077725/1981 (Laid-open No. 190698/1982) (Matsushita Electric Works, Ltd.), 03 December, 1982 (03.12.82), Full text; all drawings

The subject matter of claim 1 does not seem to involve an inventive step on account of disclosure of the documents 1 and 2 cited in the ISR.

Document 1 describes that, with regard to planar fluorescent lamp, a groove (96) for reinforcing glass substrate is constituted, a square front glass substrate (70) with fluorescent coating formed is piled on a rear glass substrate (92) and a lamp sealing body is formed with exhaust (90) is attached by sealing to uniformize the distribution of light output. It also describes, when the lamp sealing body stands in a vertical direction, a planar fluorescent lamp composed of which an exhaust (90) is attached on the top of the lamp by sealing, an electrode (72) is attached in an opposing direction against the side of the lamp by sealing and a heater (74) is attached by sealing.

Document 2 describes that, with regard to planar fluorescent lamp, considering the description of Fig. 7 in particular, the lamp is operated by applying an AC voltage to plurality of sets of electrodes from the operating unit AC. It also describes that time-division operation is performed in which an AC voltage is applied to every other sets of electrodes, and the sets of electrodes to which an AC voltage is applied and the sets of electrodes to which an AC voltage is not applied are switched sequentially at a rate not causing any flickering. Moreover, considering the description of Fig. 5, electrodes can be in a form of cylinder.

Furthermore, no significant feature is recognized in the following: a rear glass substrate (92) is composed of a bottom board and a side board (equivalent to the "glass frame" of the present application) individually; a heater (74) is mounted at the bottom; and a board spring is used to hold a heater (74).

Each invention described in documents 1 and 2 belongs to a technical field of planar fluorescent lamp and shares a common technical challenge to uniformize the distribution of light output. Consequently applying the structure of electrodes and operation method described in document 2 to the invention of document 1 is easy for a person skilled in the art.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/JP2004/018314

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1

YES

Claims _____

NO

Inventive step (IS)

Claims _____

YES

Claims 1

NO

Industrial applicability (IA)

Claims 1

YES

Claims _____

NO

2. Citations and explanations:

Document 1: JP, 5-503607, A (LYNN, JUDD, B.), 10 June, 1993 (10.06.93), line 26, upper left column, page 4 to line 23, lower left column, page 4, Figs. 7, 8 & WO, 92-002947, A1 & CA, 2067377, A

Document 2: JP, 1-75958, U (Nippon Sheet Glass Co., Ltd.), 23 May, 1989 (23.05.89), line 7, page 8 to line 3, page 10, Fig. 3 (Family: none)

Document 3: JP, 5-182638, A (Toshiba Lighting & Technology Corp.), 23 July, 1993 (23.07.93), paragraph [0029], Fig. 6 (Family: none)

Document 4: JP, 56-129063, U (Stanley Electric Co., Ltd.), 1 October, 1981 (01.10.81), line 14, page 2 to line 7, page 5, Figs. 2-4 (Family: none)

The invention of claim 1 does not appear to involve an inventive step in view of documents 1 to 4 cited in the ISR.

Document 1 describes a flat fluorescent lamp which has an envelope having a structure (1) where two glass plates with a supporting structure consisting of protuberant parts (144, 146) on a straight line are placed so that the top of the aforementioned protuberant parts are in contact and (2) where the peripheral part of the aforementioned two glass plates are sealed. In the flat fluorescent lamp described in document 1, when an envelope is put up so that an exhaust tube (159) is on the upper side, an electrode (154) is on the side of the envelope.

Document 2 describes a flat fluorescent lamp with ribs (10, 11) which are so arranged on each of two glass plates making up an envelope as to be at right angle to each other.

Document 3 describes a cylindrical electrode of a discharge lamp.

Document 4 describes that a heater is provided in a fluorescent lamp in order to make the vapor pressure of mercury an appropriate value.

A person skilled in the art could have easily conceived (1) of changing the direction of the protuberant parts on two glass plates so as to be at right angle to each other, (2) of making the shape of an electrode cylindrical, and (3) of providing a heater, in the flat fluorescent lamp described in document 1, based on matters described in documents 2 to 4. The position where a heater is provided is a mere matter of design variation that a person skilled in the art could have employed, as required, taking a place of mercury residence into consideration.